

COMPARISON OF ANALGESIC PROPERTIES OF PERINEURAL AND SYSTEMIC DEXAMETHASONE IN PATIENTS UNDERGOING UPPER LIMB SURGERIES UNDER SUPRACLAVICULAR BLOCK

A Triple-Arm, Double-Blind, Placebo-Controlled Trial

Background and Objectives: Perineural Dexamethasone prolongs the duration of single-injection peripheral nerve block when added to the local anesthetic solution. Many studies were attempted to find the efficacy of single preoperative systemic Dexamethasone on extended post operative pain relief with varying results. So we aimed to confirm that addition of intravenous Dexamethasone will prolong the duration of analgesia after single-injection supraclavicular block compared with local anesthetic alone or in combination with perineural Dexamethasone for upper extremity surgery.

Methods: Ninety patients were selected to receive supraclavicular block out of which 30 were receiving 30 ml of Local anaesthetic with 8 mg of Dexamethasone added in the nerve block solution (Group A), another 30 patients were receiving Local anaesthetic in supraclavicular block with intravenous Dexamethasone one hour before surgery (Group B) and other 30 patients were receiving Local anaesthetic with normal saline added in the solution (Group C). Duration of analgesia was studied as the primary outcome. Duration of motor blockade, quality of analgesia, opioid consumption, complications associated with steroids were studied as secondary outcomes. To test our hypothesis, the superiority of systemic dexamethasone was first compared with Control and then with perineural dexamethasone.

Results: Thirty patients in each group were analyzed. The duration of analgesia (mean [95% confidence interval]) was prolonged in the group B (897 minutes) compared with Control (340 minutes) but similar to the group A (911 minutes). The group B experienced longer motor block (592 minutes) compared with group A (538 minutes) and Control (242 minutes). Both Group A and B had reduced pain scores, reduced postoperative opioid consumption, and improved satisfaction compared with Control.

Conclusions: In a single-injection supraclavicular block, intravenous Dexamethasone has similar duration of analgesia as perineural Dexamethasone. So a single perioperative dose of Dexamethasone can be considered for prolongation of post operative analgesia without significant steroid related complications.

Keywords: Dexamethasone, Supraclavicular block, perineural-intravenous, Local anaesthetics.